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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,767	08/08/2006	Guillaume Becard	0509-1107	4666

466 7590 02/15/2011  
YOUNG & THOMPSON  
209 Madison Street  
Suite 500  
Alexandria, VA 22314

EXAMINER
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PARA, ANNETTE H

ART UNIT	PAPER NUMBER
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1661

NOTIFICATION DATE	DELIVERY MODE
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02/15/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DocketingDept@young-thompson.com

## Office Action Summary

Application No.

10/588,767

Applicant(s)

BECARD ET AL.

Examiner

ANNETTE H. PARA

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
- 4a) Of the above claim(s) 31-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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### DETAILED ACTION

#### Claims Pending

Claims 23-44 are pending. Claims 31-44 are withdrawn. Claims 23-30 will be examined on the merits.

#### Claim Rejections - 35 USC § 103

The rejection of claims 23-30 under 35 U.S.C. 103 (a) as being unpatentable over Buee et al. in view of Nagahashi et al. and Safir et al., and further in view of Mangnus et al. is withdrawn in light of Applicant's arguments.

#### Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 23-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Factors to be considered in determining whether a disclosure meets the enablement requirement of 35 USC 112, first paragraph, have been described by the court in *In re Wands*, 8 USPQ2d 1400 (CA FC 1988).

Wands states on page 1404,

"Factors to be considered in determining whether a disclosure would require undue experimentation have been summarized by the board in *Ex parte Forman*. They include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims."

#### The nature of the invention

The instant claims are drawn to a method of treating arbuscular mycorrhizal (AM) fungi comprising contacting said AM fungi with Nijmegen 1, Demethylsorgolactone, Strigol, Sorgolactone, Alectrol and Orobanchol.

#### The breadth of the claims

The claims are very broad in the sense that claims encompass many stimulating agents

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#### Working Examples and Guidance in the Specification

The specification discloses that GR24 has an effect on the activation of cell respiration of *Glomus intraradices*. The specification discloses that GR7 has an effect on the activation of cell respiration of *Gigaspora rosea*. The specification discloses that GR24 has an effect on the stimulation of the branching of the hyphae of *Gigaspora rosea*. The specification discloses that GR7 has an effect on the stimulation of the branching of the hyphae of *Gigaspora rosea*. The specification discloses that GR7 has an effect on the mycorrhization of *Medicago truncatula* by *Gigaspora rosea*. The specification has not provided any working examples of treating arbuscular mycorrhizal (AM) fungi comprising contacting said AM fungi with one of Nijmegen 1, Demethylsorgolactone, Strigol, Sorgolactone, Alectrol and Orobanchol.

#### The unpredictability of the art and the state of the prior art

The art teaches that strigol, sorgolactone, and alectrol are not useful because they are too complex to synthesize economically (Nefkens et al. J.Agric. Food Chem. 1997, page 2273, column 1, bottom paragraph). The art also teaches that strigol is unstable in alkaline soils (Mangus et al. J.Agric. Food Chem. 1992, 40 page 697, column 1 first paragraph). Finally the art teaches that chemicals such as strigol are not only too complex to synthesize economically, but also that their complexity results in instability in soil (Mangus et al. J.Agric. Food Chem. 1992, 40, page 1230, column 1, first paragraph).

#### Quantity of Experimentation

Considering that the specification teaches treating VAM only with GR24 and GR7, and that the art recognizes that strigol, sorgolactone, and alectrol are too complex to synthesize and that they are unstable in soil, additional experimentation would be required in order to use the claimed method. Specifically, since the claimed method encompasses chemical compounds such as Nijmegen 1, Demethylsorgolactone, Strigol, Sorgolactone, Alectrol and Orobanchol it is imperative to know if these compounds will stimulate the development and/or growth of AM fungi. This would require additional experimentation. Therefore, in order to practice the claimed method, a series of experiments would be required where each experiment is based on the success of the preceding requirement. Furthermore, the success of each experiment required is unpredictable. Therefore, the amount of additional experimentation required is deemed to be undue.

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### Conclusion

Considering the nature of the invention, the breadth of the claims, the unpredictable nature of the invention as recognized in the prior art, the lack of working examples and guidance provided, and the high degree of skill required to practice the invention, it is concluded that the specification does not provide an enabling disclosure for the instant claims. Therefore, additional experimentation is required before one of skill in the art could make and use the claimed invention. The amount of additional experimentation required to perform the broadly claimed invention is deemed to be undue.

### Comments

No claim is allowed. Claims 23-30 are free of prior art because there was no suggestion to treat arbuscular mycorrhizal (AM) fungi with GR24 or GR7. Thus, the elected invention of claims 23-30 will be allowable if applicants cancel the non-elected following chemical compounds: Nijmegen 1, Demethylsorgolactone, Strigol, Sorgolactone, Alectrol and Orobanchol.

### Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Annette H. Para whose telephone number is (571) 272-0982. The examiner can normally be reached Monday through Thursday from 5:30 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975. The fax number for the organization where the application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The

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For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

/Annette H Para/  
Primary Examiner